The South African Journal
of
Medical Laboratory Technology

ORGAN OF THE SOCIETY OF MEDICAL LABORATORY
TECHNOLOGISTS OF SOUTH AFRICA

Vol. 2, No. 3 A QUARTERLY Sept. 1956

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Single Numbers 5/6 Annual Subscription £1/1/-

Printed by Provincial Printing Co. (Pty.) Ltd., 482 Smith Street, Durban, and published by the Society of Medical Laboratory Technologists of South Africa, c/o Central Pathological Laboratory, Private Bag, Jacobs, Natal.

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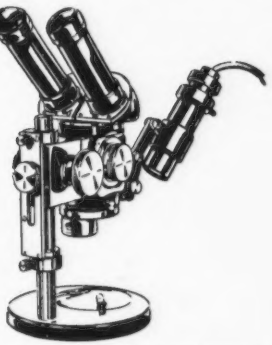

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EDITORIAL

TAKING STOCK

The Medical Laboratory Technologist has evolved considerably from the wash-up-boy-cum-Laboratory Assistant of yesteryear. However the responsibility has increased out of all proportion to the status of the Technologist.

Medical Laboratory Technology remains the "Cinderella" of the medical auxiliary services. It has neither the dramatic-romantic associations of the Nursing Service nor the professional standing of the Physiotherapist, Radiographer and Pharmacist.

Quite a large proportion of the general public do not know of the existence of the Laboratory Technologist. How often does one see depicted on cinema screens or read in novels of "the Laboratory Technologist agitatedly peering down a microscope shaking flasks of gaily coloured liquids while voluntarily giving blood to a dying patient from the arm that he is not using, with gallons of perspiration standing out on his invariably handsome face"? This role is usually given to a person termed "doctor."

The role of the Medical Laboratory Technologist within the laboratory is such that he must be acknowledged as being a professional person. Laboratory technique has become so vast, complicated and varied, that it is very difficult, if not impossible, for any one Technologist to become master of all the subjects classed under the term "Medical Laboratory Technology." If the Technologist can be accorded the responsibility of emergency duty or be placed in a laboratory without the direct supervision of a Pathologist, he is surely deserving of the title "Professional." A specimen arrives at the Laboratory, the Technologist cultures, does sensitivity tests and reports which antibiotic should be efficacious against the infecting organism. This service used to be termed "Diagnosis." In an emergency cross-matching, the Technologist checks and issues blood of the correct type and group. With the knowledge that the blood is ready and safe for use, the surgeon operates. The report on and the responsibility of the transfusion belongs to the Technologist. The cross-matching is just as important to the patient as the operation.

It is realised that salaries could be higher and conditions better but we should concentrate on raising our own standards and thereby inevitably improve our status. A higher standard of technical education and examination is now being formulated. The future of the Medical Laboratory Technologist is becoming increasingly evident. At present Technologists work under the direction of Pathologists. The time is approaching when Technologists and Pathologists will work as associates, the Pathologist specialising in interpretation and integration with the clinical aspects and the Technologist being the expert in technique.

REDAKSIONEEL

VOORRAAD OPNAME

Die Mediese Laboratorium Tegnoloog het aanmerklik ontwikkel van die „opwas-jong"-cum-laboratorium assistent van 'n paar jaar gelede. Die verantwoordelikheid het egter buite alle eweredigheid vermeerder met die status van die Tegnoloog.

Mediese Laboratorium Tegnologie bly die „Aspoestertjie" van die hulpdienste. Dit besit nog die dramatiese en romantiese verbindings van die verplegingsdienste, nog die profesionele status van die Fisioterapis Radiografis of Apteker.

'n Groot gedeelte van die algemene publiek weet glad nie van die bestaan van die Laboratorium Tegnoloog nie. Hoe dikwels sien 'n mens nie op skouburg skerms, of lees in boeke van die „Mediese Tegnoloog wat benoud deur 'n mikroskoop kyk, en flesse met gekleurde vloeistowwe skud, onderwyl hy vrywilliglik bloed skenk aan 'n sterwende pasiënt, van die arm wat hy nie op daardie oomblik gebruik nie, terwyl die sweet van sy gesig aftap?" Hierdie rol word gewoonlik aan 'n persoon met die naam van „dokter" gegee.

Die rol van die Mediese Laboratorium Tegnoloog is as sulks dat hy moet erken word as 'n beroeps-persoon. Laboratorium tegniek het so uitgebrei, ingewikkeld en veranderlik geword, dat dit baie moeilik, indien nie moontlik is, vir slegs een enkele Tegnoloog om al die vakke wat onder Mediese Laboratorium Tegnologie geklassifiseer word, te bemeester. Wanneer die Tegnoloog die verantwoordelikheid van 'n nooddiens aanneem, of in 'n Laboratorium geplaas word, sonder die direkte toesig van 'n Patoloog, verdien hy seker die benaming van 'n „Profesioneel." 'n Monster word na die laboratorium gestuur. Die Tegnoloog kweek dit, doen daarop sensitiwiteits-toetse, en stel vas watter antibiotiek doeltreffend is teen die aansteeklike organisme. Dit is bekend as „Diagnose." In 'n bloedoortappings-noodgeval, reik die Tegnoloog die regte tipe en groep bloed uit. Die chirurg opereer, met die wete dat die bloed gereed en veilig vir gebruik is. Die rapport oor die oortapping en die verantwoordelikheid daarvan, rus op die Tegnoloog. Die oortapping van die regte tipe bloed is net so belangrik as wat die operasie is vir die pasiënt.

Dit word besef dat salarisse hoër, en voorwaardes beter, behoort te wees, maar ons moet daarop konsentreer om ons eie standaarde, en sodoende ook ons eie status te verhoog. 'n Hoër standaard van tegniese opvoeding en eksamen tree nou in werking. Teenswoordig werk Tegnoloë onder die toesig van Patoloë, maar die tyd kom egter nader wanneer Tegnoloë en Patoloë as gelykes sal werk. Die Patoloog sal dan in die vertolking en integrasie van die kliniese aspekte spesialiseer, terwyl die Tegnoloog die deskundige in die tegniek sal wees.

DR. THOMAS

The resignation of Dr. J. C. Thomas from the position of Provincial Pathologist, Natal Provincial Administration, came as a shock to many of the medical technologists under his control.

Dr. Thomas has at all times shown himself to be in sympathy with the aims of our Society and has been ever ready to give advice, and his valuable time, when we have been confronted with particularly difficult problems. The very first meeting in Natal to consider the possibility of forming a Natal Society was in the nature of a discussion group of senior medical technologists at Dr. Thomas' home, and he was the first guest speaker under the auspices of the Society of Medical Technologists of Natal. He has been a ready speaker since that date and has participated in our social activities and we have come to regard him as a part of our existence.

The Council at its August meeting unanimously decided to invite Dr. Thomas to become the first President of the Society of Medical Laboratory Technologists of South Africa and we feel both pleased and honoured that he has accepted the invitation. We are fortunate, therefore, in retaining contact with him and we wish him well in his new position.

A FURTHER INNESTIGATION ON THE DETERMINATION OF B. COLI TYPE 1 (FAECAL) IN WATER SAMPLES

P. ROUX

South African Institute for Medical Research, Johannesburg

Roux and Dicker (1954) noted that approximately 10% false positive results were obtained by the use of the modified Eijkman test for determining the presence of *Bacterium coli* type 1 in water and milk samples.

These false positive results were discovered when using Brilliant Green Bile Medium as a comparison.

Botha and Bates of Durban (1955) confirmed this discrepancy of results in the Eijkman test and 11.8% false positive results in comparing MacConkey and Brilliant Green media.

In a personal communication to the author, Dr. Burman, senior bacteriologist to the Metropolitan Water Board, London, suggested the use of different brands of peptone with the addition of 0.03% tryptophan would reduce the percentage of false *B. coli* type 1 results.

In this work undertaken at the Institute over the last year, samples of water received for routine examination were bacteriologically examined in the usual manner and when Eijkman positive results were encountered (signifying the presence of faecal *B. coli*), further investigations were carried out with two brands of Brilliant Green broth media made from two brands of peptone, which, for convenience, will be labelled A and B.

In addition 0.03% tryptophan was also introduced into both sets of media.

METHOD

Sub-cultures were made from the positive MacConkey medium on to the two sets of Brilliant Green broth and peptone waters and these were then incubated at 44° C. The production of gas in the Brilliant Green medium and production of indole were noted as positive for faecal *B. coli* type 1.

RESULTS

504 out of a total of 602 samples agreed in *B. col* type 1 results in all three media (in the two peptones and MacConkey). 526 showed *B. coli* type 1 in MacConkey and peptone "A" media.

542 showed *B. coli* type 1 in MacConkey and peptone "B" media.

In 560 samples the two Brilliant Green media agreed.

The difference in results, though small, nevertheless showed one peptone medium agreeding more closely to MacConkey medium than the other. There still appears to be an approximately 10-14% lower reading of *B. coli* type 1 in Brilliant Green broth medium as compared with the MacConkey medium, which confirms the author's previous findings (1954).

It was suggested that the presence of an inhibitory agent such as copper might be responsible for the variation in results. Such agents as heavy metals and particularly copper might be an important bactericidal agent. Copper assays were therefore performed on the two brands of peptone. Peptone A contained 12.5 parts per million and peptone B contained 15 parts per million.

Such small amounts would, hovever, have no bearing on the results recorded.

DISCUSSION

The use of different peptones in Brilliant Green medium gives different degrees of agreement with MacConkey liquid medium in determining the presence of *B. coli* type 1 in water samples. This work confirms previous findings (1954, 1955), that MacConkey liquid medium used in the Eijkman test is not sufficiently reliable.

Routine water for bacteriological examination employing Brilliant Green Bile medium with a suitable peptone is highly desirable.

CONCLUSION

602 samples of water giving positive faecal *B. coli* type 1 results were further investigated by studying their reactions on two different Brilliant Green Bile media.

In using Brilliant Green Bile medium it is necessary to incorporate a satisfactory type of peptone if the results of determining the presence of *B. coli* type 1 are to be reliable.

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ACKNOWLEDGEMENTS

I am indebted to Mr. Bodenstein, of the Government Chemical Laboratories, Johannesburg, for the copper assays and to Dr. J. F. Murray, Superintendent of the Routine Division of the South African Institute for Medical Research, for permission to publish these results.

THE TECHNIQUE OF MASS BLEEDING

G. C. BUCKLE and J. W. HILL

Central Pathological Laboratory, Natal Provincial Administration, Durban.

In these days of mass blood testing of large population groups, it is advisable to have available a speedy and efficient method for obtaining sterile specimens of the required amount of blood. The use of a clean syringe for bleeding each person is expensive and entails tedious preparation; while the use of one syringe, which is washed out after each sample is taken, is to be deprecated, because of the danger of infection.

In the course of bleeding thousands of Africans during a serological survey being carried out in Durban, a method was used which, it is believed, is the answer to the problem of obtaining samples of blood from numbers of people in a comparatively short space of time.

The apparatus used is shown in diagram I.

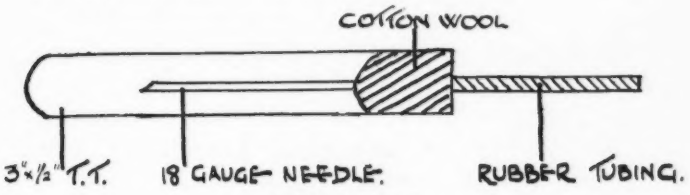

DIAGRAM I

METHOD OF PREPARATION

A 2in. piece of latex rubber tubing is fitted over the head of an 18 gauge needle. The needle and tubing are inserted into a 3in. x ½in. test tube which is then plugged with cotton wool. The tubes are then wrapped in calico in convenient numbers, autoclaved, and left in the drum. When a tube is required for use it is removed from the drum with sterile forceps.

Many tubes can be prepared in this way within a short space of time.

At the time of actual bleeding, the needle, rubber tubing and cotton wool are taken out of the tube which is placed in a cardboard container for re-use. The cotton wool is now removed from the needle and rubber tubing. The rubber tubing is placed into a sterile container of the required size, and the needle is inserted into a vein. With practice this is easily accomplished, and the blood appears to flow rapidly into the container. In diagram II this stage is demonstrated.

When sufficient blood has been obtained, the rubber tubing is pinched to stop the flow. The sterile container is removed and corked. The needle is now withdrawn from the vein, and the rubber tubing and needle are placed in a basin of water. An assistant using a syringe should then wash the needle through. It is understood that before the needle is inserted into a vein, a tourniquet needs to be applied to the arm, which should also be sterilised in the normal way.

If more than one sterile container of blood is required from each person, the rubber tubing is pinched when the first container is full. This is replaced by an empty container, which is then filled by releasing the pressure on the rubber tubing.

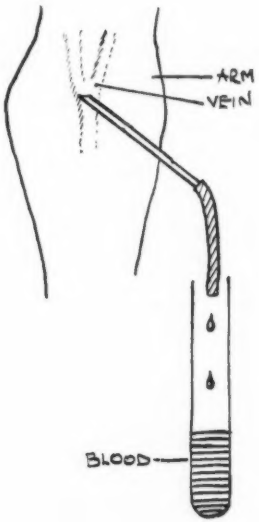

DIAGRAM II

The delay entailed in transferring blood from syringe to sterile container is eliminated and the danger of air embolism occurring appears to be remote.

The above technique has proved to be most successful in bleeding up to one hundred persons an hour without undue difficulty and the specimens of blood, without exception, arrived at the laboratory in perfect condition.

THE FAILURE TO DEMONSTRATE FREE TUBERCLE BACILLI IN A LABORATORY

By P. HAWES

Central Pathological Laboratory, Natal Provincial Administration, Durban.

In view of the ability of tubercle bacilli to remain viable in dark and dusty places (Smith, 1942; Williams and Hay, 1930; Maddock, 1933; Rhines, 1935) due to their resistance to drying (Mackie and McCartney, 1953) it was felt that it might be possible to demonstrate them in various places in a laboratory devoted to the diagnosis of tuberculosis.

METHOD

Using sterile throat-swabs, dust was swept into the throat-swab tubes when possible. In each case a few drops of sterile "normal" (isotonic) saline were added and the tube was gently shaken after replacing the swab.

The places swabbed were the outside (normally only a few inches from the face of a worker) of a glass inoculating hood in which primary cultures are made, a telephone, the exterior of a refrigerator, a rack for holding microscope-slides, little-used shelves, a work-bench on which specimens are handled, microscope eye-pieces and the upper surface of ceiling lampshades.

Direct smears were made and stained for acid-fast bacilli by the Ziehl-Neelsen method.

The specimens were then concentrated and decontaminated by Petroff's method (1915), (4% sodium hydroxide and neutralisation with hydrochloric acid), and smears were made and cultures inoculated from the concentrate. Two slopes were inoculated, one on Jensen's modification (1932) of Lowenstein's medium (1930), and the other on the blood medium of Tarshis (1953). All cultures were incubated at 37°C. for six weeks.

RESULTS

The direct smear from the glass of the inoculating-hood showed two acid-fast bacilli, and that from the telephone showed one. All other smears were negative for acid-fast bacilli. Cultures from the concentrates of the two specimens showing acid-fast bacilli in direct smears yielded a typical acid-fast bacilli which proved to be saprophytes. None of the other cultures yielded acid-fast bacilli. No tubercle bacilli were recovered.

DISCUSSION

It has been shown that hospital workers display a higher incidence of tuberculosis than the rest of the population, and persons engaged in the post-mortem examination of tuberculous cadavers are especially exposed to infection (Hedvall, 1940; Sloan, 1942; Morris, 1946; Meade, 1948). It can, therefore, be reasonably supposed that this is directly due to their occupation. It has been shown (Wilson and Miles, 1948) that under certain conditions about which there is little certainty (Wilson and Miles, 1955) young adults may show a higher death-rate due to tuberculosis than the rest of the population. Since the majority of medical laboratory technologists are young adults as well as hospital workers, it might well be reasoned that they are particularly exposed to the possibility of infection.

In the author's laboratory the results indicate that, within the scope of the experiment, there were no demonstrable free viable tubercle bacilli in places where they might be expected. However, the small number of specimens examined in the investigation, and the necessity for the presence of a considerable number of acid-fast bacilli in a specimen if they are to be demonstrable (Cruikshank, 1951), prevents a more conclusive result.

The actual making of smears and inoculation of "slopes" was done under a simple hood. It would, therefore, appear that this simple precaution offers a good measure of protection to workers. If all the work had been done under open conditions it is felt that the results might have been different.

SUMMARY

A limited investigation was made to demonstrate free tubercle bacilli in a laboratory engaged in the handling of tuberculosis material. None was demonstrated, but two saprophytes were grown.

ACKNOWLEDGEMENTS

Acknowledgement is made to Dr. J. C. Thomas, Provincial Pathologist, Natal, for permission to publish.

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PHOTOMICROGRAPHY—PART I

C. R. STUART

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Following upon my previous article, "An Introduction to Medical Photography," I shall endeavour to take you further into the technicalities of Medical Photography. The subject which I feel is of the greatest interest to technologists is Photomicrography.

The term photomicrography means the production of normal size negatives and prints of objects of microscopic dimensions. I have many times heard the term "microphotography" used in connection with the above subject. The actual meaning of that term is the production of

minute prints or transparencies from normal negatives. The only connection which that technique has with photomicrography is the fact that a microscope would be needed to view the result!

Although it is strictly true that for the production of a photomicrograph all that is necessary is a microscope, a camera and some film, the excellence of the result depends, to a large extent, on the equipment used. Many books will inform you that by setting a camera on top of a microscope with coincident optical exis and with the camera lens set at infinity, it is possible to produce photographs through the microscope. That is true, but the results cannot be termed photomicrographs. The odd exception does, of course, occur—but the majority of results are odd and no exception!

APPARATUS

A good microscope fitted with a monocular tube, objectives of as fine a quality as possible (planachromats if available), a projection ocular or alternatively a compensated match for the objectives in use. The microscope should be set up on a vibration-free mounting or alternatively the microscope and camera should vibrate as a unit.

The camera may be any of a number of types, the only criterion being that the lens should be removable. A useful outfit consists of an old double extension plate camera taking 2½in. x 3½in. plates and a roll film back. These cameras can be found selling very cheaply, the lens can be removed and used in an enlarger or sold to defray the total costs. It is a simple matter to focus on the ground glass screen of the camera, replace the screen with a plate or roll film and make your exposure. A 35mm or roll film camera can be used provided a means of focussing on the film plane is devised. There are elaborate devices consisting of prismatic beam splitting devices which are very convenient in use but which are generally made only for use with a specific camera. A simple method of focussing is by the use of a light tight box which has a screen in place of the film plane and is of the same size as the film being used. This box would be interchanged with the camera after the correct focus has been achieved.

EXPOSURE

There are no set rules observed for the calculation of exposure for photomicrography. The usual test strip is made by a series of step exposures made in geometric progression, i.e., 2 sec., 4 sec., 8 sec., etc. As experience is gained it will be found that exposure times can be estimated by visual examination.

GENERAL OBSERVATIONS

Owing to the difficulty of providing even illumination over a large area, low power photomicrography is the most difficult. I would suggest that for the beginner the lowest power objective used should be x10.

Any power of ocular is suitable, it is however preferable not to exceed x12.5, owing to the increasing aberrations found in simple oculars of higher magnifications. There are specially corrected oculars and objectives for photomicrography which I shall describe more fully at a later date.

A medium deep green filter (625 Ilford) should be used for black and white photomicrography, this type of filter cuts light to a narrow waveband, giving a monochromatic illumination which tends to counteract the inherent chromatic aberration in the optical system of the microscope.

FACTS TO REMEMBER

1. The microscope light must be centred.
2. Objectives and oculars should be paired for best results.
3. All optical surfaces and slide must be clean.
4. Apparatus must be vibration-free or should vibrate as a unit.
5. A medium deep green filter should be used for black and white photomicrography.
6. DO NOT use an objective of lower power than x10 or ocular of higher power than x12.5.

It must be realised that the facts and suggestions set out above are only an initial introduction to photomicrography. I hope to be able to go into more practical detail and theoretical data at some later date.

While the making of photomicrographs may appear complicated, the result is well worth the time and trouble taken in their preparation.

THE NEPHRON AND "BRIGHT'S DISEASE"

In a talk on "The Nephron and Bright's Disease," Professor Gordon gave initially an outline of the normal morphology of the nephron and its blood supply. He indicated that it was estimated that there were one million nephrons in each kidney. The length of a single nephron is calculated at 1 - 1½ inches and, on this basis, it may be computed that the total length of the tubules of each kidney extends over a distance of 20 miles. Professor Gordon described how the capillary tuft of the glomerulus invaginates the blind end of Bowman's capsule at the upper end of the nephron, and he likened this invagination to the fitting of a glove to the fingers—the fingers representing the capillaries and the glove constituting the upper end of the nephron. Professor Gordon illustrated the various points affecting the morphology of the nephron in a series of cyclostyled sheets, several of which were coloured. He explained how knowledge of the 3-dimensional structure of the nephron had been accumulated through the use of micro-dissection techniques

and nephron casting. These techniques have in recent years been developed to a great extent by the celebrated American morphologist, Jean Oliver.

In a diagrammatic representation, Professor Gordon showed the location of the glomeruli in the cortex of the kidney. Some of these glomeruli are situated close to the medulla and are known as the juxta-medullary glomeruli. In cases of traumatic shock, the blood supply is often shunted through these juxta-medullary glomeruli, leaving the majority of the glomeruli in the rest of the cortex without a blood supply for varying periods. This shunt of blood which occurs in traumatic shock was first described by the Spanish surgeon, Trueta, who subsequently left Spain to work at Oxford.

Professor Gordon gave a short outline of the physiology of the nephron and explained the fundamental mechanism of ultra-filtration and tubular re-absorption. He explained how the ultra-filtrate, consisting of plasma minus proteins, passes into the proximal convoluted tubule of the nephron and how in its passage down the tubule various substances are re-absorbed to different degrees, e.g., glucose is completely re-absorbed normally.

On the basis of his description of the normal morphology of the nephron, Professor Gordon then explained the fundamental lesions which occur in "Bright's Disease." ("Bright's Disease" was originally described in the 19th century by Richard Bright in England, and the term was applied to the group of symptoms characterised by oedema and the presence of changes in the urine with death in renal failure. The term is used nowadays to include a number of syndromes such as diffuse glomerulonephritis, the so-called "lipoid nephrosis" and nephrosclerosis.)

Professor Gordon showed that in one of the most important types of " Bright's Disease," lesions occur in the glomeruli, and these lesions are accompanied by changes in the tubules which are reflected in various alterations in the constituents of the urine which are detected by laboratory examinations. Professor Gordon traced the development of this type of nephritis and showed how through fibrosis in the kidneys various bizarre and anomalous distortions and changes occur in the nephron as a whole, leading to the production of nephrons without glomeruli. Professor Gordon explained that the concept that a tubule could only survive provided that the glomerulus was intact is not generally accepted to-day. Aglomerular nephrons similar to the types of nephrons which occur in certain fishes are found in the kidneys in chronic "Bright's Disease."

After a short description of some of the leading clinical features of nephritis, Professor Gordon concluded with a short account of the prognosis in the different types of "Bright's Disease."

ABSTRACTS (Bacteriology)

Improved medium for determination of motility and biochemical characteristics of intestinal pathogens. Rappaport, F.; Stark, G. J.; and Konforti, N. (1955). Acta Medica Orientalia, 14, 10.

An improved culture medium for the determination of motility, fermentation of mannitol, urea-splitting and production of indole and hydrogen sulphide is described. When used in combination with other media such as Kligler's iron triple-sugar medium, it is stated to be sufficient for biochemical identification of intestinal pathogens and for the rapid elimination of coliform and Proteus strains.

A new enrichment broth medium for Gram-negative organisms of the intestinal group. Hajna, A. A. (1955). Public Health Laboratory, July, 1955.

A new enrichment broth medium for all types of enteric bacteria is described and the formula is given. A greater number of isolations of Shigellae and Salmonellae are reported from rectal swabs preserved with a special "specimen preservative" using this medium. The author also describes the isolation of Gram-negative bacilli from urines, blood, eating and drinking utensils, throat swabs and sputa, using this medium.

The rapid identification of Strep. pneumoniae by Optochin sensitivity. Bowers, E. F.; and Jeffries, L. R. (1955). J. Clin. Path. 8. 58.

The organism under test is spread on the surface of a "plate" of blood agar and, with Pneumococci, a zone of inhibition is noted after over-night incubation at 37°C. around an 8 m.m. filter-paper disc dried at 37°C. after impregnation with 0.02 ml. of a 1 in 4,000 aqueous solution of Optochin (ethylhydrocupreine hydrochloride). The solution is stated to be stable at refrigerator and room temperatures, and to be unaffected by autoclaving at 15lb. pressure for 30 minutes. A high degree of correlation with the bile-solubility test is reported in the 695 cultures tested.

The haemolytic activity of chloramphenical-resistant Salmonella typhi. Vaczi, L.; and Mihalyfi, I. (1955). Acta Microbiologica, Budapest 3, 87.

Nine strains of Salmonella typhi of different phage types had their resistance to chloramphnical increased artificially to approximately 50 times the initial figure. It was found that the bacilli were then haemolytic to the erythrocytes of mice, guinea pigs, rabbits, sheep and man.

The relation between temperature and the action of certain disinfectants. Szita, J.; and Barsy, G. (1955). Acta Microbiologica, Budapest 3, 173.

Salmonella typhi was added to dilutions of six disinfectants at 20°, 25°, 30° and 35°C. The temperature coefficient of each disinfectant was calculated, and found to vary between 2.6 for formalin and 11.2 for hexadecylpyridinium bromide.

Studies on the action of alcohol on micro-organisms. Schinzel, A.; and Lingnau, J. (1955). Arch. f. Hyg. u. Bakt. 139, 265.

Experiments on dried and fluid suspensions of vegetative bacteria indicated that the optimal bacteridal concentration of alcohol is 70% by volume, most bacteria being killed within one minute at this dilution. Spores of B subtilis were resistant to alcohol. Tests with coli bacteriophages indicated that the action of alcohol on phage is much slower than that on bacteria; and also that susceptibility varies directly with alcohol concentration. The authors suggest that alcohol should not be assumed to be lethal to a virus until it has been experimentally shown to be so.

PATHOLOGISTS' VIEWPOINT

TRAINING OF MEDICAL TECHNOLOGISTS

At the present time the courses for technologists are under review. It is apparent from previous experience that insufficient emphasis has been placed upon what are regarded as the menial tasks in the daily laboratory routine. All too frequently we in laboratories are inclined to blame the method by which a specimen has been taken. The fault may lie here but can also be our own. A prolonged prothrombin time is alleged due to an overdose of anticoagulant drug but improperly cleaned glassware, i.e., in which the detergent has not been adequately removed, can cause a false result. I was once shown a stained peripheral blood film where the technologist considered the patient to have a roaring bacteraemia; poor student, a freshly filtered bottle of Giemsa stain soon discarded his theory.

Perhaps the most urgent deficiency in our programme is the lack of practical training in media making. Bacteria are sensitive beings and are most meticulous in their growth requirements. Consistency of agar, pH of media and salt concentration affect their cultural characteristics and biochemical activity.

It is to be hoped that for the benefit of all—patient, practitioner, technologist and pathologist—in planning future programmes of training, more emphasis will be placed upon these simple and basic procedures upon which the success of a laboratory stands to rise or fall.

J.D.T.

READERS' FORUM

JACOBS, NATAL.

The Editor,

Sir,

R. E. Silverton's article, "The Training of Medical Laboratory Technicians in the Union of South Africa and Great Britain," Vol. 1, No. 4, is of interest if only for the false picture which it paints.

Mr. Silverton has attempted to speak for South Africa when he would have been better advised to entitle his article "The Training, etc. . . . on the Witwatersrand and Great Britain," as his observations are essentially parochial in nature and refer to Johannesburg only.

Sex differentiation does not occur as the rule in South Africa. In Natal and the Cape, where training courses are in operation, female students are given exactly the same opportunities as are males, and in Natal at least, where the organised training course is the oldest recognised course in the Union, the ratio of female to male student technologists is in the order of 8 to 1.

I have received, through the courtesy of its Editor, a copy of the American Magazine "Lab. World," which features comment on Mr. Silverton's article and which tends to perpetuate the erroneous supposition that this system "results in a preponderance of male technicians in South Africa." This is not the case and it is unfortunate that Mr. Silverton did not adequately stress the parochialism of his views.

Whilst still on the subject of training I should like to draw attention to the fact that fully authoritative courses of training have been in existence at the Natal Technical College, Durban, since 1948 and a course under the auspices of the University of Cape Town has been running at the Medical School there for a considerable period. In Johannesburg, on the other hand, until this year the South African Institute for Medical Research has conducted courses for its own Staff only and has tended to confine entry to these courses to male staff. This was due to its own internal apprenticeship system.

Finally, on the subject of support for the Society of Medical Laboratory Technologists of South Africa I would go so far as to say, in support of Mr. Silverton, that the Medical technologist who expects his lot to be improved whilst he himself is unwilling to lend support to his professional Society is lacking in appreciation of the dignity of his calling and is therefore unsuited to the work which he is doing.

Yours faithfully,

G. W. WIKELEY.

Salisbury,
Southern Rhodesia.

The Editor,

Sir,

On 26th May, 1956, the Salisbury and District Association of Medical Laboratory Technologists' meeting consisted of a round table discussion between a team of local technologists (Mr. D. W. Plampin, Mr. J. McKechnie and Mr. A. L. C. Hunt) and a team of physicians and surgeons (Mr. Barton Gilbert, Mr. T. Simpson and Dr. Anderson) on the subject "Is the best use being made of the modern medical laboratory technologist's training and experience," under the chairmanship of Mr. Vance Carlisle.

The chairman opened the proceedings with a very brief history of the evolution of the modern laboratory technologist, and gave details of the lengthy training he must undergo, and the comprehensive knowledge he must acquire before attempting to obtain any qualifications. With such training and experience the qualified technologist was in a position to render considerable assistance to the physician and surgeon, especially in the more complicated cases, but could only do so if there was close liaison which, if established universally, could only accrue to the advantage of the technologist, the practitioner and, more important, the patient.

The Technologist panel, built up an admirable case for the negative side of the discussion, with many points dealing with the lack of the provision of suitable precis of case histories, unsuitable specimens (and much of the laboratory work in Rhodesia is of the postal variety), lacks of liaison between Doctor and Pathologist to develop the investigations on logical lines.

The Medical panel responded well and much discussion yielded difficulties on both sides in achieving the ideal full liaison.

For instance, a point was raised on the difficulty caused in the laboratory in the case of the urgent request for compatible blood in cases, for example, of cold surgery, and it was pointed out by the medical team that this is at present unavoidable in Salisbury, owing to the fact that admittance to hospital is governed by the availability of beds and was likely to take place at a moment's notice, with the operation to take place the next day, and allied to this the fact that patients often have to travel great distances prior to admittance, which makes the preliminary grouping, etc., difficult to achieve.

At the end of the meeting, although no vote was taken, the general feeling of the meeting appeared to be that the best use was not being made of the modern laboratory technologist's training and experience.

The Association's meetings for the next six months are:—

29th June, 1956: "Aspects of Heart Surgery," by Mr. A. J. Graham.

This lecture will be preceded by a film, "Pneumonectomy in Tuberculosis," presented by Pfizer Laboratories, on which Mr. Graham will comment.

27th July, 1956: Film show presented by Pfizer Laboratories:

(1) "Antibiotics and Terramycin."

(2) "Namru Story" (Schistosomiasis and Typhus Fever in Egypt).

3rd August, 1956: The Association's Annual Dinner and Dance, the Punch Bowl, Greendale.

24th August, 1956: "David Livingstone with Special Reference to Medicine," Part I, 1840-1856, by Dr. M. Gelfand.

28th September, 1956: "Looking Back," by Dr. Ross K. Brooks.

26th October, 1956: "The Clinical Implications of Pathological Investigations in Pregnancy," by Miss G. E. Keith.

9th November, 1956: "David Livingstone with Special Reference to Medicine," Part 2, 1858-1864, by Dr. M. Gelfand.

30th November, 1956: "Laboratory Diagnosis of Human Protozoal Infections," by D. Livingstone.

14th December, 1956: Sundowner, to be held at Dr. G. V. Blaine's laboratory, 39 Montagu Avenue, Salisbury, at 5.30 p.m.

South African technologists visiting Rhodesia are invited to attend the above meetings.

Yours faithfully,

D. W. PLAMPIN,

Corresponding Member.

Salisbury,
Southern Rhodesia.

The Editor,

Sir,

The Salisbury and District Association of Medical Laboratory Technologists held their Annual Dinner and Dance on the 3rd August, 1956, at the Punch Bowl, Salisbury. This very successful evening was attended by 85 people, including the Mayor and Mayoress of Salisbury, who were the guests of honour.

The Association President, Dr. R. B. Baird, spoke of the great progress the Association had made since its formation 14 months ago. In that time no fewer than 26 Medical and Technical meetings had been held, in which many of our medical colleagues had participated, and he looked forward to even more success in the future.

Yours faithfully,

A. L. C. HUNT,

A.I.M.L.T.

EAST LONDON

The Editor,,

Sir,

Recent staff increases in this laboratory (Frere Hospital), and the steadily-increasing volume of work, have spotlighted a problem that some few years ago we would never have believed could occur in the East London lab., namely, working conditions. We appreciate the fact that the development of this problem in East London has been late in comparison with other towns, but the problem is here and is daily becoming more urgent.

The present building, erected in 1941, was regarded as the very model of a first-class pathology laboratory. The original plan provided for the addition of several extra conveniently-placed rooms at a later date. The later date came in 1947 and once more we had all the space we needed and some to spare. Now, however, we are again short of working space and the only possible solution seems to be to build upwards. The design of the labs in this new castle in the air has been the subject of much controversy, but the renovation of one of our old rooms with Formica bench tops, light-coloured rubber floor tiles and fluorescent lighting, and the provision of benches of two different heights, has suggested several important points to be incorporated in the new laboratories. Lighting, ventilation, wash-up and toilet facilities are features that seem to have been treated somewhat cursorily in the past, and it is probably no exaggeration to say that the working conditions in most of the medical laboratories in this country would give a factories inspector apoplexy. A great deal of attention is given by architects to the convenience and comfort of the patients' accommodation in hospitals. It is time that more consideration was given to the staff.

But it is not always reasonable to blame overcrowding and bad planning for unpleasant working conditions. It is incumbent upon technicians to keep their labs in a decent state. Painting, of course, is not the responsibility of technicians, but the care of paintwork is, or should be. I have found so often that the state of a technician's room reflects the quality of the man—or woman—very accurately. The person who takes a pride in the state of his workshop takes a pride in his work. I recall the occasion when I once found a junior technician carving his initials in a Burmese teak bench top, the value of which by present-day standards far exceeded his monthly salary. I deeply regretted the fact that the complexity of administrative regulations precluded my deducting the value of the bench top from his salary. The quality of that man's work was what one would expect.

Yours faithfully,

H. FLEETWOOD-HOWARD.

BOOK REVIEW

"An Introduction to Medical Laboratory Technology," Baker, Silverton and Luckcock. Butterworths. S.A. price 35/6d.

In the higher reaches of Medical Laboratory Technology there is no lack of suitable text books in all the major subjects studied, but there has long been felt the need for a book which would introduce the student to Medical Laboratory Technology as a whole and which would guide him along the way to his first examination.

The authors have endeavoured to fill this gap by introducing, from their long experience in the training of student technologists, a text book which covers the syllabus for the Intermediate examination of the Institute of Medical Laboratory Technology in England.

The book contains step by step methods from the cleaning of glassware to standard routine laboratory tests, together with hints drawn from the author's experiences.

Some criticism may be levelled at the introduction in a modern text book of one or two tests which are now obsolete, but on the whole this may be classed as a successful venture and the aspirant technologist will find no better written guidance at the moment.

G.W.W.

SOCIETY NEWS

CAPE BRANCH

Our winter series of lectures started off during May with Professor J. G. Thompson, M.D., Ch.B. (Aberdeen), Professor of Pathology, University of Cape Town, addressing a well-attended meeting. Professor Thompson's subject was Tuberculosis.

On the evening of 27th June Professor G. C. Linder, M.D., F.R.C.P., Professor of Chemical Pathology, University of Cape Town, lectured to a fairly well attended meeting on Diabetes. Professor Linder illustrated his lecture with some very clear diagrams and charts.

Our lecturer on Thursday, 26th July, was Professor F. G. Holliman, M.A., Ph.D. (Cantab), Professor of Organic Chemistry, University of Cape Town. Professor Holliman's subject was Plastics. This talk was illustrate dby a large number of samples of Plastics in their various stages of manufacture to the finished articles. As in all our lectures, the evening ended with the lecturer answering questions from members present.

J. H. MAYTHAM,
Hon. Secretary.

SOUTHERN TRANSVAAL BRANCH

The Southern Transvaal Branch of the Society is slowly getting into its stride as a more active group and the paid-up membership has now reached a satisfactory level. The Committee has had several meetings, mainly to discuss the amendments to the Constitution which are to be finalised at the Council Meeting in Durban. It has been resolved to draw up a programme of activities for the members, details of which will be discussed shortly. The need for constant prodding of members still remains, especially as there are several persons in senior technical positions who should apply for membership of the Society and for registration with the Medical Council.

The attitude adopted by research personnel to the Society is a source of worry to the Committee but we are convinced that an organised propaganda system will eventually have the desired effect.

F. A. BRANDT,
Branch Correspondent.

STUDENTS SECTION—NATAL BRANCH

At the Annual General Meeting in May, a new Student Representative was elected, and as that Student Representative, I would like to thank our former Representative, Mr. E. Coetzee, for the keen interest he showed in the student activities. A word of thanks also goes to Mr. A. Greenfield for temporarily carrying on the responsibility prior to the elections.

A student committee has been formed, consisting of seven members, one from each laboratory. They are: M. Sutherland (Hon. Secretary), Currie Road; D. Ernst (Addington), M. Tezona (D.B.T.S.), I. Muller (K.E.H.), D. Burgher (K.G. V), A. Greenfield (Wentworth), S. Smit (Chairman).

Our only function so far has been a colour-slide show, held at Wentworth on the 19th July. The highlight of the evening was an excellent feature on a trip to the Antarctic, presented to us by a University student, Mr. E. Buchanan.

The meeting was quite well attended and enjoyed by all.

S. Y. SMIT,
Student Representative.

FOR SALE

LEITZ Micro-Ibso Attachment, as new. £27/10/- o.n.o.—Wikeley, Central Laboratory, P/Bag Jacobs.

APPOINTMENTS VACANT

THE SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH

APPLICATIONS are invited from suitably qualified medical technologists for vacancies in the Pathological Division of the Pneumoconiosis Research Unit of the Council for Scientific and Industrial Research situated at the South African Institute for Medical Research. The salary scale for male technical assistants is £750 x 30 — £810 x 42 — £894; a fixed cost of living allowance of £234 per annum is paid to married male appointees. The salary scale for female technical assistants is £306 — 330 x 30 — £540.

Preference will be given to technicians experienced in histopathological or bacteriological techniques.

Successful applicants will be required to join the South African Institute for Medical Research Provident Fund; for the purposes of the Fund, a birth certificate and a medical certificate of sound health must be produced.

Applications giving full details of qualifications and experience should be submitted to the Director, South African Institute for Medical Research, P.O. Box 1038, Johannesburg.

THE SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH

APPLICATIONS are invited for senior medical technologists in the Department of Histopathology of this Institute. Considerable experience in histopathological techniques is essential.

The salary scales are £540 x 40 — £820 and £860 x 40 — £980 plus a variable cost of living allowance of approximately £290 per annum. Membership of the Staff Provident Fund is compulsory and for this purpose a medical certificate of sound health is required.

Applications giving full details of training and experience should be submitted to the Director, South African Institute for Medical Research, P.O. Box 1038, Johannesburg.

LABORATORY TECHNICIAN

AFRICAN EXPLOSIVES & CHEMICAL INDUSTRIES, LIMITED, have a vacancy at Umbogintwini for a Laboratory Technician for bacteriological work, which will include testing of Disinfectants for Rideal Walker Coefficient and water for B-coli and faecal coli.

Rates of pay will depend on previous experience. Liberal annual leave is granted and both Pension and Medical Aid Schemes are operative in the Company.

Apply for further details to: Factory Secretary, African Explosives & Chemical Industries, Limited, UMBOGINTWINI.

SMITH & NEPHEW (PTY.) LTD.

It has come to our notice that the above firm, of Gillitts Road, Pinetown, Natal, is celebrating its Silver Jubilee. At the same time the parent organisation in England is celebrating its Centenary.

The organisation, which now employs over 4,000 people in the manufacture of bandages, plasters and surgical dressings, began in 1856, when a chemist in the English seaport of Hull took his nephew into partnership.

At the recent opening ceremony of its new factory at Pinetown, Dr. Stevenson, Director of Medical and Health Services for the Province of Natal, described the contribution to medicine and surgery which this world-famous company has made.

NOTICE TO CONTRIBUTORS

All contributions are to be addressed to:—The Editor, "The South African Journal of Medical Laboratory Pathology," Room 213, Dept. of Pathology, Medical School, Umbilo Road, Durban.

Contributions may be written in English or Afrikaans, and should preferably be typed in double-spacing on foolscap sheets on one side of the paper only.

Figures should be drawn in Indian ink, and all figures and tables should be labelled as such (e.g. Figure 1, Table 1, etc.).

Authors should make adequate references to previous works on their subjects. These should be set out as follows:—Author's surname and initials of Christian names; the year of publication (in parentheses); the name of the journal, which should be abbreviated according to the World List of Scientific Periodicals (see below); the volume number (underlined); and the first page reference.

Example:—Moron, I. B. (1960). J. unsuccess. Med., 20, 99. References to books should give the author's name and initials, the year of publication, title of book, name of publisher, and town in which published.

References should be arranged in alphabetical order of the authors' surnames. If more than one work by the same author is listed, these should appear in chronological order.

Technologists are reminded that regulations demand that all original articles of a technical or scientific nature must be approved by the heads of their departments before being submitted for publication.

Title abbreviations according to World List of Scientific periodicals

All nouns are given capital letters, and adjectives small letters. Articles, conjunctions and prepositions are omitted.

Examples:—

J. Amer. med. Ass.	*S. Afr. J. clin. Sci.*
Lancet	*Stain Tech.*
Amer. J. clin. Path.	*J. Bact.*

REPRINTS AND PHOTOGRAPHS

If requested before publication, 24 reprints of original articles will be supplied free to contributors. As a temporary measure, contributors are asked to defray the costs of publishing photographs accompanying articles.

KENNISGEWING AAN INSENDERS

Alle bydrae moet as gevolg geadresseer word:—Die Editeur, „Die Suid Afrikaanse Joernaal van Mediese Technologie", Laboratorium, King Edward VIII Hospitaal, Durban, Natal.

Bydrae mag in Engels of Afrikaans geskryf word en moet verkieslik getik wees dubbel spasiering op folio-papier en net op een kant van die vel.

Figure moet in Indiese ink geteken word en alle figure en tabelle moet geëtikeer word as sulks (b.v. Figuur 1, Tabel 1, ens.).

Auteurs moet voldoende referensies gee tot vorige werke oor hulle onderwerpe. Die moet as volg uiteengesit word:—Auteur se familienaam en voorletters; die jaar van uitgawe (in hakies); die naam van die Joernaal, wat moet verkort volgens die Wêreld Lys van Wetenskaplike Tydskrifte (sien hieronder)r die volume nommer (onderstreep); en die eerste pagina referensie.

Voorbeeld:—Moron, I. B. (1960). J. unsuccess. Med., 20, 99. Referensies tot boeke moet die auteur se naam en voorletters meld, die jaar van uitgawe, titel van boek, naam van uitgewer, en stad waar dit gepubliseer is.

Referensies moet in alfabetiese orde, volgens auteurs se familiename gerangskik word. Indien meer dan een werk deur dieselfde auteur gemeld word, moet dit in tydsorde voorkom.

Tegnoloë word daaraan herinner dat regulasies vereis dat alle oorspronklike artikels van tegniese of wetenskaplike aard moet die goedkeuring dra van hulle departementale hoofde voor dit ingestuur word vir publikasie.

Titel verkortings volgens Wêreld Lys van Wetenskapliker Tydskifte

Alle selfstandige naamwoorde moet begin met hoofletters en byvoeglike naamwoorde met klein letters. Artikels, verbindings, en voorsetsels word uitgelaat.

Voorbeelde:—

J. Amer. med. Ass.	*S. Afr. J. clin. Sci.*
Lancet	*Stain Tech.*
Amer. J. clin. Path.	*J. Bact.*

HERDRUKKE EN FOTOGRAWE

Indien aanvraag ingedien word voor publisering. sal 24 herdrukke van oorspronklike artikels vry aan beydraers verskaf word. As in tydelike maatreel word bydraers gevra om die koste van publisering van fotos wat saam met artikels gaan self te betaal.

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Ladies are to be admitted

"The 'Female Physicians' question, thanks to Professor Masson, has made a great stride during the past week. Ladies are to be admitted to study Medicine at Edinburgh University. Imagine the feelings of the non-contents when Professor Masson, in a final outburst, described their argumentation as 'rampageous mysticism, dashed with drivel from Anacreon!'"
(Nature, 1869, I, i, 25)

In 1869 scientific clinical methods were nearly as unpopular as women doctors. Today men and women work together in clinical, bacteriological and pathological laboratories all over the world; and in more than seventy countries regard the products of the B.D.H. Laboratory Chemicals Group with equal favour.

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